Mr. Alpert’s Honors Conceptual Physics

Video questions

Dear Honors Conceptual Physics Classes (Beta and Gamma)

I am sorry that I cannot be with you today but ask that you watch the following

<https://www.youtube.com/watch?v=QGhguInx6MQ>

See if you can follow the derivation of the formula for kinetic energy

KE = ½ mv^2

Also note the derivation of the formula for Potential Energy

PE = mgh

Look up the following:

“Conservation of energy”

How does this apply to a roller coaster?

We split PE into three forms: what are they? (do not include nuclear)

In this class, we will split KE into the following categories (NOTE: other sources split this energy into different categories:

Mechanical Energy

Sound

Thermal Energy

Nuclear Energy

Electric Energy

Electromagnetic Energy

Answer the following questions:

1. Energy is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_-meters.
2. What is the difference between work and energy?
3. How is a roller coaster an example of a device that changes PE into KE and back again?
4. How can you tell if something has potential or kinetic energy?

Homework:

Answer the questions on the handout and do the calculations for KE and PE